



Sewer Maintenance Division: Environmental Management System Manual



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EMS Manual

Scope

The City of Raleigh Public Utilities Department Sewer Maintenance Division operates a sanitary sewer collection system that serves the City of Raleigh and surrounding communities of Garner, Rolesville, Wake Forest, Wendell, Knightdale, and Zebulon in Wake County, North Carolina with a service population of approximately 500,000. The City currently maintains approximately 2,300 miles of sanitary sewer mains.

The Sewer Maintenance Environmental Management System (SMEMS) established the following desired outcomes/goals, consistent with the Public Utilities strategic plan, in an effort to produce continual program improvement.

- Improve regulatory and environmental performance
- Improve efficiency of the Sewer Maintenance training program
- Improve communication with stakeholders and interested parties

The SMEMS is documented in this manual and in other referenced and associated materials, and applies to the operation and maintenance of the sanitary sewer collection system in an effort to protect the environment from the release of wastewater. This SMEMS manual is based on the ISO 14001:2004 American National Standard.

The Sewer Maintenance Division operates under a Collection System permit (WQCS 00002) issued by the State of North Carolina and modifies its program as needed in response to factors such as new state regulations.

Responsibility

The overall responsibility for overseeing the SMEMS lies with the Environmental Management Representative (EMR). The EMR is sponsored and supported managerially by the Assistant Public Utilities Director (APUD) for Wastewater, who has the authority to commit resources and people to sewer maintenance. The SMEMS manual is approved by the APUD for Wastewater. Future revisions and maintenance of the manual can be made by the EMR in conjunction with the SMEMS Team.

Procedure

Review and Approval

1. Review manual at least annually.
2. Recommend and review any updates and other changes arising prior to the annual review at SMEMS team meetings.
3. Summarize changes to the manual and report to the APUD for Wastewater for review (EMR).
4. Update manual with approved changes. (EMR)

Communication of Revisions

1. Inform APUD for Wastewater and SMEMS team of any significant revisions to the SMEMS manual.
2. Post most recent version of the SMEMS manual on the City's website and intranet.
3. Control manual so that changes can be made only by the EMR or designee.

References

ISO 14001:2004 American National Standard (4.1)

Management Policy

Process Control Points, Environmental Aspects and Operational Control of Process Control Points

Roles and Responsibilities

Documentation, Document Control and Recordkeeping

Management Policy

Purpose

To establish the sewer maintenance management policy for the City of Raleigh's Sewer Maintenance Division.

Sewer Maintenance Management Policy Statement

"To operate and maintain the sanitary sewer collection system in a sustainable manner while protecting the environment from the release of wastewater."

The Sewer Maintenance Division is committed to upholding this policy through:

- Continuously improving in overall environmental performance, compliance, and collection system-wide operations and maintenance
- Providing a framework for using pollution prevention practices to meet our legal regulatory requirements
- Establishing and reviewing goals, objectives, and targets for environmental performance, compliance, and collection system-wide operations and maintenance
- Compliance with legal and other applicable environmental laws, regulations and requirements
- Developing a long term approach to managing the maintenance of the wastewater infrastructure
- Identifying and/or preventing the problems that lead to sanitary sewer overflows (SSOs)
- Communicating with and educating stakeholders, interested parties and staff

Approved: June 30, 2014

Signed: *JJ Lynch*, Assistant Public Utilities Director for Wastewater

Procedure

1. Communicate policy to affected staff, relevant contractors and interested parties.
2. Post the policy statement on the City's intranet and website (www.raleighnc.gov).
3. Train affected employees on SMEMS policy.
4. Employees are expected to comply with the letter and intent of this policy.
5. The policy will be reviewed at least annually and whenever changes to regulations, processes or corrective action may dictate the need for a change in policy.
6. The EMR will bring the revisions to the SMEMS team for consideration. Recommended revisions to the policy may also be included in SMEMS Management Reviews.

References

Compliance with Legal and Other Requirements
Objectives and Targets
Communication
Competence, Training and Awareness
Management Review
ISO 14001:2004 American National Standards (4.2)

Process Control Points, Environmental Aspects and Operational Control of Process Control Points

Purpose

To identify and update Process Control Points (PCPs) and environmental aspects in the SMEMS under direct control or influence of the Sewer Maintenance Division where legal compliance and requirements, public acceptance and environmental impacts can be controlled. Operational controls are tools utilized to effectively manage PCPs. They may include Divisional Operating Procedures (DOPs), Departmental Operating Instructions (DOIs), employee skills, O&M manuals and other activities.

Procedure

Identifying and updating PCPs and Operational Controls

1. Evaluate unit process operations and management activities to identify and maintain up-to-date listings of PCPs and operational controls of identified PCPs.
2. Consider legal, other and public acceptance requirements, WEF manuals of practice and industry recognized BMPs, as well as personal experience of program staff when identifying and/or updating PCPs and operational controls.
3. Document identified PCPs and operational controls (Appendix 3.1)
4. Evaluate and measure performance at PCPs.
5. Review information in Appendix 3.1 at least annually, when there are regulatory changes or whenever major operational changes occur.
6. Use Management of Change procedure for operational and process changes.
7. Document any necessary changes to Appendix 3.1 in the EMS Manual (EMR). If revisions to the process control points are made, information related to operational controls, monitoring and measurement and any other relevant areas of the SMEMS (including potential environmental impacts listed in Appendix 3.2) will also be reviewed, modified and documented as appropriate.
8. Require contractors to establish their own operational controls consistent with their roles and responsibilities in the SMEMS activities as specified in their contracts. Sub-contractors must also adhere to the requirements of the contractor.
9. Notify the third-party auditor of any constructive or operational change that requires revisions to the process control points or their associated environmental impacts. (EMR)

Identifying and Evaluating Significant Environmental Aspects

1. Consider the level of sewer maintenance control of influence, normal and abnormal conditions, reasonable and foreseeable emergency conditions and past environmental incidents when identifying environmental aspects.
2. Note occasions where sewer maintenance does not have a degree of management control or influence over the environmental aspects and impacts for future review.
3. Review sewer maintenance activities at least annually for changes to processes and operations.
4. Where reasonable, consider both direct and indirect impacts.
5. Following identification of aspects, assign a significance rating based on probability, severity and frequency.
6. Consider both beneficial and harmful environmental impacts when determining significant aspects.
7. Document identified significant aspects (Appendix 3.2)
8. Management has decided not to communicate significant aspects except as required by regulations.
9. Consider and incorporate significant aspects into objectives and targets.
10. Review and update significant aspects at least annually or when major changes occur to processes or other relevant areas.

References

Management Policy
Compliance with Legal and Other Requirements
Communication
Competence, Training and Awareness

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Documentation, Document Control and Recordkeeping
Monitoring and Measurement
Management Review
WEF Manuals of Practice
Notes of EMS Team Meetings
ISO 14001:2004 American National Standards (4.3.1 & 4.4.6)

Legal and Other Requirements

Purpose

To identify, track and respond to existing legal and other requirements or to changes in legal and other requirements, regulatory compliance issues applicable to the sewer maintenance program, and monitor compliance of contractors.

Procedure

1. Identify legal and other requirements for the sewer maintenance program through networking, communication with regulatory agencies, professional associations and publications, management review process and any other available means.
2. Assign staff to track specific regulatory, legal and legislative initiatives identified and present summary of activity for initiatives at management review.
3. Evaluate potential impacts, applicability to the sewer maintenance program.
4. Incorporate legal and other requirements through identifying critical control points and environmental aspects where legal and other requirements apply.
5. Document legal and other requirements (Appendix 3.1).
6. Communicate potential issues and responses for changes in legal and other requirements that may affect the SMEMS at SMEMS team meetings, emails, memos, management reviews or other means.
7. Contractors identify, track and implement changes in legal and other requirements that impact their involvement in the SMEMS.
8. Address all noncompliances through the CAPA process.

Monitoring Regulatory Compliance of Contractors

1. Contractors are to adhere to applicable regulatory and other requirements as stated in their contract agreement.
2. Contract liaisons will monitor, record and identify regulatory and contractual compliance or noncompliance during site inspections.
3. Contractors must notify the EMR and appropriate SMEMS staff (contract liaison) of any regulatory noncompliance.
4. Contractors will notify the EMR, contract liaison and the Sewer Maintenance Superintendent for contractual (non-regulatory) noncompliances.
5. Address all noncompliances through the CAPA Process.

References

Process Control Points, Environmental Aspects and Operational Control of Process Control Points
Documentation, Document Control and Recordkeeping
Corrective and Preventive Action (CAPA)
Internal Audit
City of Raleigh Wastewater Collection System Permit WQCS #00002
ISO 14001:2004 American National Standards (4.3.2)

Objectives and Targets

Purpose

To establish objectives and targets for continuous improvement of the sewer maintenance management program.

Procedure

1. Establish objectives and targets for the SMEMS on an annual basis (Appendix 5.1).
2. Consider and incorporate Sewer Maintenance management policy, significant environmental aspects and input (if any) received throughout the year from the stakeholders, regulators, elected officials, sewer maintenance staff and other interested parties if feasible and applicable to the SMEMS.
3. Set objectives that support performance improvements in the desired outcome areas (goals).
4. Establish objectives and targets using SMART criteria and that are consistent with the sewer maintenance management program.
5. The SMEMS team will review and approve objectives and targets.
6. Present draft objectives and targets to stakeholders and interested parties via the City's website and various media outlets for review and/or comment.
7. Final objectives and targets will be posted on the City's intranet.
8. Document modifications or changes to objectives and targets, and the reason for the modification. Objectives and targets may be modified based upon changing priorities or circumstances.
9. Develop an action plan assigning responsibilities, necessary resources and milestones for established objectives and targets.
10. Consider objectives and targets and make recommendations during annual budget development process to complete the objectives scheduled for the budget year.
11. Measure progress against objectives and targets on an annual basis.
12. Measure and track status of objectives and targets at SMEMS team meetings.
13. Use CAPA process if progress is considered inadequate.
14. Summarize objectives and targets and include in the annual wastewater report.
15. Evaluate progress of objectives and targets in internal audits and Management Review.

References

Management Policy
Communication
Monitoring and Measurement
Corrective and Preventive Action (CAPA)
Internal Audit
Management Review
ISO 14001:2004 American National Standards (4.3.3)

Communication

Purpose

To establish procedures to provide and receive external communication from interested parties and contractors, and internal communication from sewer maintenance staff in the sewer maintenance program performance process and the third party verification process.

Procedure

Receiving Public Input

1. Utilize a combination of both formal and informal mechanisms to receive and respond to input from interested parties.
2. Document contact, input and information received, both formal and informal record and respond to significant input received from interested parties.
3. An inquiry/complaint/compliment form will be used to record, when possible, the names, addresses, phone numbers and e-mail addresses of interested parties.
4. Forward contact information to appropriate staff person who will respond to the contact within two business days.
5. Document, log and track staff response.
6. Contractors may also receive input while performing contracted services for the sewer maintenance program.

Response and Consideration of Public Input

1. Consider input received from stakeholders and interested parties (if any) when making decisions regarding the SMEMS, setting goals and objectives and for gaining public support of maintenance activities.
2. Review records of public input received (if any) during SMEMS team meetings for relevancy to the program.
3. Review and update goals and objectives to help address and incorporate comments and concerns received when feasible and/or appropriate.
4. Discuss and consider public input during the review and update of the environmental aspects and impacts, PCPs and operational controls. Comments received regarding environmental impacts will be incorporated when feasible and/or appropriate.

Communication and Outreach

1. Interested parties and stakeholders may include, but not limited to, COR sewer customers, public, contractors, regulators and other City departments/divisions.
2. Provide opportunities, both formal and informal, for interested parties to communicate their input on environmental impacts, program performance and areas in which the program can improve.
3. Review input received (if any) at SMEMS team meetings for relevancy and consideration into planning the sewer maintenance program.
4. Document sewer-related education and outreach efforts.
5. Prepare a written sewer maintenance program report at least annually of the performance of the SMEMS during the previous calendar year.
6. At a minimum, the report will contain the following information:
 - Summary of monitoring and measurement activities that demonstrate the program performance relative to established objectives and legal requirements.
 - Summary of relevant contractor activities.
 - Progress towards achieving program objectives and targets.
 - Results of internal audits and independent third-party audits.
7. Communicate and/or distribute copies of the sewer maintenance management program report via the annual sewer report, website and/or other forms of written, verbal and electronic communication.

Internal Communication

1. Report relevant and required information about sewer maintenance activities to staff via emails, memos, staff meetings, postings, marlin boards or other methods. SMEMS information is also available on the City's intranet.
2. Provide opportunities for employee input into the SMEMS.
3. Employees communicate any relevant or required information to their supervisors via emails, memos, staff meetings, verbally or other methods.

Contractor Communication

1. Identify and incorporate the roles, duties and responsibilities of sewer maintenance contractors into service agreements and/or contracts.
2. Disseminate other SMEMS program information to contractors through contract negotiations or other standing and ad-hoc meetings, email and telephone conversations. Information also disseminated to contractors during semi-annual inspections for contract compliance. (contract liaisons)
3. Contractors communicate to Public Utilities via emails, memos, meetings, verbally or other methods.

References

Management Policy
Process Control Points, Environmental Aspects and Operational Control of Process Control Points
Compliance with Legal and Other Requirements
Objectives and Targets
Competence, Training and Awareness
Emergency Preparedness and Response
Annual Sewer Report
ISO 14001:2004 American National Standards (4.4.3)

Roles and Responsibilities

Purpose

To define the roles and responsibilities of staff and contractors performing SMEMS functions. In addition, other sections and related documents describe roles and responsibilities where relevant to certain procedures.

Procedure

1. Roles and responsibilities for various individuals (including contractors) that are specific to the SMEMS are assigned by Superintendent of Sewer Maintenance and the EMR. They are reviewed and updated as necessary on an annual basis.
2. The Superintendent of Sewer Maintenance and the EMR will also review existing roles/responsibilities whenever significant operation changes are made to ensure that roles/responsibilities are appropriately defined. Revisions to the roles and responsibilities tables are made by the EMR.

SMEMS Roles and Responsibilities

Assistant Public Utilities Director (APUD) for Wastewater

1. Reports directly to the Public Utilities Director
2. Management responsibility and authority for overseeing the SMEMS including ensuring adequate human resources, funding, other resources and training are available to develop, implement and operate the SMEMS
3. Appoints the EMR
4. Approves the SMEMS Manual

Sewer Maintenance Superintendent

1. Reports to the APUD for wastewater
2. Has overall management responsibility for the Sewer Maintenance Division and collection system
3. Prepares annual budget for Sewer Maintenance Division
4. Serves as Collection System Permittee

Sewer Maintenance Assistant Superintendents

1. Reports directly to the Superintendent
2. Serves as ORC (Operator in Responsible Charge) for Collection System Permit
3. Coordinates activities within the sewer maintenance and collection operation
4. Establishes overall direction, determines priorities, and ensures that aspects of the operation and maintenance of the sewer maintenance division are conducted in an efficient, cost effective manner and are compliant with existing rules and regulations
5. Develops and/or edits DOPs of operational processes

Program Managers

1. Report directly to the Assistant Superintendents
2. Responsible for the day to day management of the sewer maintenance and collection system
3. Ensures compliance with all regulatory reporting requirements
4. Performs the daily operations necessary to ensure that the collection system performs in a satisfactory manner
5. Develops and/or edits DOPs of operational processes
6. Ensures that the contractor performs contracted services in accordance with the terms of the contract and any other operation agreements
7. Serves as backup ORC

EMS Team

1. Consists of the Superintendent, Assistant Superintendents, Program Heads and designated personnel involved in sewer maintenance and collection management activities
2. Recommends SMEMS manual and program revisions and/or adjustments to resources

SMEMS Management Team

1. Consists of the APUD, Superintendent, Assistant Superintendents, EMR and EMS Coordinator
2. Participates in management reviews of SMEMS

Environmental Management Representative (EMR)/EMS Coordinator

1. Reports directly to Sewer Maintenance Superintendent.
2. Overall responsibility for implementing SMEMS.
3. Monitors and reports performance of SMEMS
4. Conducts management review of SMEMS with the SMEMS Management Team at least annually.
5. Updates SMEMS manual and associated appendices as necessary.
6. EMS Coordinator responsible for oversight of departmental management systems and divisional management systems in conjunction with EMR.

Administrative Staff Support Specialist

1. Serves as backup EMR.
2. Provide administrative support to SMEMS

Contractors

1. Adherence to commitments of the SMEMS policies, ISO 14001:2004 American National Standards and SMEMS functions as outlined in SMEMS procedures for contracted activities relevant to sewer maintenance and collection management.
2. Adherence to the responsibilities listed in service agreements for contracted activities relevant to sewer maintenance and collection management.
3. Performs to the obligations of the contracts with regard to sewer maintenance and collection activities.

References

SMEMS Manual
Competence, Training and Awareness
Documentation, Document Control and Recordkeeping
ISO 14001:2004 American National Standards (4.4.1)

Competence, Training and Awareness

Purpose

To identify, track and provide training activities to ensure competency of staff in the sewer collection system and SMEMS functions, including training activities of contractors.

Procedures

Training

1. Conduct training on the SMEMS and general SMEMS awareness at least annually
2. Maintain an up to date list of required training and track training received by staff
3. Evaluate competency and awareness of staff and identify appropriate training
4. Post SMEMS policy at locations throughout the facility
5. Train new employees on policy and SMEMS awareness as part of new employee orientation
6. Confer with SMEMS team to identify training needs based on projected process changes and CAPAs
7. Train staff on facility emergency operation procedures, including the Emergency Action Plan (EAP) for sewer maintenance
8. Notify contractors of the environmental policy and require establishment of their own training program consistent with the SMEMS
9. Monitor training requirement of contractor personnel on a semi-annual basis and report to EMR (contract liaisons)
10. Train internal SMEMS auditors on internal audit procedures prior to performing audits

Competency

1. Monitor, evaluate and record training activities
2. Develop testing and evaluation procedures
3. Assess staff competency in performing their assigned responsibilities using some or any of the following methods
 - Job descriptions
 - Communication
 - Oral or written tests
 - On the job observations
 - Peer reviews
 - Annual employee performance reviews
 - Supervisor evaluations
4. Provide additional training in areas where competency is determined to be inadequate

Recordkeeping

1. Document attendance at training sessions and maintain records
2. Maintain employee training records containing certifications and/or attendance sheets for training sessions attended both inside and outside of Public Utilities
3. Cross reference updated external operator's lists: DWR Collections and Distributions records with internally maintained spreadsheets and files
4. Maintain safety related records for training, equipment, and tools
5. Contractor training records are maintained by the respective contractors' human resources divisions, as defined in service agreements

References

Management Policy
Process Control Points, Environmental Aspects and Operational Control of Process Control Points
Compliance with Legal and Other Requirements
Objectives and Targets
Roles and Responsibilities
Documentation, Document Control, and Recordkeeping
Corrective and Preventive Action (CAPA)
Internal Audit
Contractor Service Agreements
ISO 14001:2004 American National Standards (4.4.2)

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Emergency Preparedness & Response

Purpose

To ensure effective response to accidents and emergency situations associated with sewer maintenance management activities, and to help minimize the risk associated with unusual or emergency situations that can potentially impact human health or environmental quality, including the activities of the sewer maintenance contractors.

Procedure

1. Review and update the comprehensive Public Utilities Emergency Operations Plan (EOP) for Wastewater Collections, Wastewater Treatment, and Reclaimed Water at least every three years. Interim revisions to specific sections of the EOP are made on an "as needed" basis.
2. Evaluate and update the Sewer Maintenance Emergency Action Plan (EAP) (Appendix 9.1) at least annually based on desktop exercises, actual incidents, actual exercises and drills and change in personnel.
3. Testing and training with respect to safety and emergency response procedures is conducted on a periodic basis as determined by Process Control Training Officer and Sewer Maintenance Superintendent.
4. Conduct investigations of accidents and emergency situations associated with sewer maintenance management activities.
5. Document corrective action plans for accidents and emergency situations using the CAPA form.
6. Monitor contractors performing work related to sewer maintenance activities to verify they have on file the most current version of the Sewer Maintenance EAP and follow the guidelines applicable to sewer maintenance management activities as stated in their service agreements.
7. Contractors are required to incorporate relevant portions of Sewer Maintenance EAP as applicable to contracted activities and incorporate these into their own Emergency Response and Preparedness Plans.

References

Compliance with Legal and Other Requirements
Competence, Training and Awareness
Communication
Documentation, Document Control and Recordkeeping
Corrective and Preventive Action (CAPA)
Contractor Service Agreements
ISO 14001:2004 American National Standards (4.4.7)

Documentation, Document Control & Recordkeeping

Purpose

To identify important documents and records required to support and demonstrate the performance of the SME MS. This procedure applies to contractor activities within the SME MS but does not apply to contractors' internal documents, which are controlled and managed according to contractors' internal procedures as appropriate.

Procedure

Documents and Records Requiring Control

The following documents related to SME MS are considered "controlled" documents:

- Policy statement
- SME MS Manual
- DOPs
- EOP
- Service Agreements/Contracts

Document Control Procedure

1. Identify documents requiring control, responsible individual for controlled document and the location of the stored documents (Appendix 10.1).
2. Maintain a master copy of each controlled document. Any copy of a controlled document other than the master copy is considered uncontrolled.
3. Controlled documents are approved, identified and dated, easily accessible and reviewed to ensure the document is correct, complete and up-to-date.
4. Review of controlled documents will generally be made in response to one or more of the following:
 - Management of change (MOC)
 - Corrective and preventive actions (CAPA)
 - Regulatory requirements
 - Management review
 - Review of DOPs
 - Periodic review of management system
5. Notify affected persons of approved changes in controlled documents and make updated versions available.
6. Archive or destroy obsolete versions of the documents.
7. Version and revision history will be maintained for all controlled documents.
8. The responsible person may delegate document control responsibilities but retains the responsibility to ensure the document is effectively controlled.
9. The EMR has sole responsibility for updating/revising the SME MS Manual to reflect current practices. Minor grammatical edits, links to new or revised documents, etc. are not considered significant changes. Updates/revisions will generally be made in response to one or more of the following:
 - Internal audits
 - Third party audit
 - Operational changes
 - Annual reviews Process Control Points, Operational Controls and SME MS objectives and targets
 - Annual SME MS Program Report

Documents of External Origin

1. The following documents are needed to operate the sewer maintenance SME MS but are not reviewed or approved by Public Utilities:
 - O&M manuals
 - Regulations
 - Permits
 - SDS sheets
2. These documents must be kept current and accessible by the assigned custodian.

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EMS Records

1. Identify records that require control, the primary custodian of the record, the location of the stored records and the retention requirement (Appendix 10.2).
2. The primary custodian will maintain each controlled record so it is identifiable, legible, easily accessible and secure.
3. Only the primary custodian can alter or change a controlled record.
4. Changes to controlled records must note the reason for the change and the approval for making the change on the previous record.
5. Follow the NC Records Retention and Disposition Schedules for Counties and Municipalities and the USEPA records retention guidelines for controlled records.
6. The primary custodian may delegate record control responsibilities but retains responsibility to ensure the document is effectively controlled.

References

Contractor Service Agreements

NC Records Retention and Disposition Schedules for Counties and Municipalities

USEPA Records Retention Guidelines

ISO 14001:2004 American National Standards (4.4.4, 4.4.5 & 4.5.4)

Monitoring and Measurement

Purpose

To monitor compliance with applicable legal/regulatory requirements, measure performance at PCPs, contractor performance and track progress toward achieving program objectives and targets.

Procedure for Monitoring and Measurement

Monitoring Performance and Compliance at Process Control Points

1. Establish DOPs for monitoring and measuring operating performance and compliance with legal and other requirements at PCPs.
2. Monitor work performance data monthly for compliance.
3. Collect and record work performance data electronically and store in Sewer Maintenance file located in Public Utilities intranet shared drive.
4. Conduct review of monitoring and measurement activities for applicability on an annual basis or whenever significant changes in processes and/or operations occur. Revisions (if any) to Appendix 3.1 and associated DOPs and monitoring/measurement documents will be made by the EMR.
5. Monitor contractor performance on a regular basis for compliance with service agreements/contracts (Contract Liaison).

Monitoring Progress Toward Goals and Objectives

1. Establish objectives and targets for each program goal.
2. Review and track progress towards meeting objectives and targets at SMEMS team meetings.
3. Prepare status update for SMEMS team (EMR).
4. Monitor progress toward achieving objectives and targets and notify SMEMS team if progress falls behind (EMR). Use CAPA form to document deficiencies in progress. Modifications to objectives and targets may have to be made to accommodate for changing circumstances.
5. Review progress of objectives and targets in internal audit process. Include summary in Sewer Maintenance program report.

References

Management Policy
Process Control Points, Environmental Aspects and Operational Control of Process Control Points
Compliance with Legal and Other Requirements
Objectives and Targets
Communication
Documentation, Document Control and Recordkeeping
Corrective and Preventive Action (CAPA)
Sewer Maintenance Program Report
Internal Audit
ISO 14001:2004 American National Standards (4.5.1)

Corrective and Preventive Action

Purpose

To establish, document and maintain procedures for investigating noncompliance with SMEMS protocols, legal, regulatory and other requirements, including conformance issues that may arise from monitoring and measurement activities, or nonconformances noted as a result of internal or external SMEMS audits.

Procedure

1. Identify nonconformances, noncompliances, problems or potential problems discovered during routine monitoring and measurement, emergency incidents, audits, experience or other methods.
2. Document problem or issue using SMEMS Corrective and Preventive Action (CAPA) form (Appendix 12.1) and report problem to EMR, Sewer Maintenance Superintendent and Assistant Superintendents.
3. Develop corrective action plan to implement necessary corrective and preventive actions.
4. Perform root cause analysis for problem or issue. Include root cause in corrective action plan.
5. Review and approve proposed corrective action plans, designate responsible staff for implementation and monitor progress of corrective action plans.
6. Monitor and review progress toward resolution and effectiveness of solution of CAPA through SMEMS team meetings. Completed CAPAs are closed by the appropriate program head, assistant superintendent, superintendent, internal or external auditors and/or EMR.
7. Document corrective actions performed in response to complaints or contacts from citizens and interested parties.
8. Maintain status tracking log of CAPAs (EMR).
9. Report nonconformances, noncompliances and corrective actions to management as part of Management Review process.

References

Management Policy

Process Control Points, Environmental Aspects and Operational Control of Process Control

Compliance with Legal and Other Requirements

Roles and Responsibilities

Communication

Documentation, Document Control and Recordkeeping

Internal Audit

Management Review

ISO 14001:2004 American National Standards (4.5.3)

Internal Audit

Purpose

To conduct periodic reviews of the SMEMS to evaluate its performance and identify opportunities for improvement.

Procedure

1. Conduct periodic internal audits of the SMEMS processes (at least annually).
2. Develop scope and plan for internal audit (Internal Auditor) with input from EMR.
3. Conduct audits in accordance with auditing guidance for environmental management systems found in ISO 19011.
4. Develop and maintain audit schedule for conducting internal and process audits. (Internal Auditor)
5. Include assessments to evaluate sewer maintenance management system performance including management policy, progress toward objectives and targets, response to nonconformances, management review, communications and contractor performance. Specific SMEMS elements may be evaluated as a part of this review, at the discretion of the EMR and SMEMS team.
6. Review preliminary audit results with appropriate program head and EMR.
7. Report internal audit results to SMEMS team for review.
8. Nonconformances will be addressed using the CAPA process.
9. Communicate the internal audit report to staff.
10. Present internal audit report to management as part of the Management Review process.

Selecting and Training Internal Auditors

The internal audit will be conducted by the party(s) selected by the EMR with input from the SMEMS team. The EMR will periodically evaluate the need to provide training or guidance to the internal auditor(s). Auditor training necessary to complete the audit may be provided by the EMR or others. The EMR will be responsible for coordinating any subsequent activities related to training or guidance.

References

Management Policy
Compliance with Legal and Other Requirements
Communication
Corrective and Preventive Action (CAPA)
Management Review
ISO 14001:2004 American National Standards (4.5.5)

Management Review

Purpose

To conduct a strategic look into the SMEMS on an annual basis to address the possible need for changes to policy, objectives and targets, sewer maintenance operations and other SMEMS elements based on internal audit results, third-party audit results, changing circumstances, and commitment to continual improvement.

Procedures

1. Conduct periodic Management Reviews with SMEMS Management team to assess and review the SMEMS.
2. Management Review will include:
 - Follow up from previous management reviews
 - Sewer Maintenance program effectiveness
 - Environmental performance
 - Progress towards objectives and targets
 - Internal and/or third-party audit results and compliance assessments
 - Sewer Maintenance management policy
 - Effectiveness of Corrective and Preventive Action (CAPA) process
 - Recommendations for improvement to the system
3. Report results of the Management Review at SMEMS team meetings.
4. Prepare minutes of the Management Review and post on Public Utilities intranet shared drive.
5. Update the SMEMS manual as needed per recommendations.
6. The APUD for wastewater will communicate results of the Management Review with the Public Utilities Director.

Management of Change

1. Monitor for changing conditions and requirements that necessitate modification to the operations of the sewer maintenance management program.
2. Assess sewer maintenance management processes affected by changing conditions or requirements; and review initiation of those changes at SMEMS team meetings.
3. Assign staff to design and implement the changes.
4. Document the changes using the Management of Change form (Appendix 14.1), and implement approved changes.
5. Update procedures and documents per established procedures.
6. Notify third-party auditor of any significant changes to the SMEMS.
7. Retrain affected staff and contractors on revised EMS procedures and practices as soon as practical (SMEMS team and appropriate supervisors).

References

Management Policy
Compliance with Legal and Other Requirements
Communication
Documentation, Document Control and Recordkeeping
Monitoring and Measurement
Annual Sewer Report
Internal Audit
ISO 14001:2004 American National Standards (4.6)

Glossary of Terms

Appendices - documents that relate more to the sewer maintenance management system as a whole. The manual is complete without the appendices but appendices add insight into the sewer maintenance management program.

APUD – Assistant Public Utilities Director

BMP – best management practice.

CAPA – Corrective and preventive action.

CORPUD – City of Raleigh Public Utilities Department.

DOP/DOI – divisional operating procedures/departmental operating procedures. Standard work instructions and practices for employees describing the “how to” steps in managing PCPs of a specific management activity affecting sewer maintenance activities, compliance with legal and other requirements.

DWR – Division of Resources (State of North Carolina).

EMR – Environmental Management Representative

EMS – Environmental Management System: management framework for integrating environmental considerations into day-to-day operations and decision-making, and for improving organizational performance over time.

Environmental Aspects – activities or services that can interact with the environment.

Environmental Impacts – any change to the environment whether adverse or beneficial, wholly or partially resulting from environmental aspects.

EAP – Emergency Action Plan.

EOP – Emergency Operating Plan.

Goals – desired outcomes and/or improvements to the system.

Interested Parties - those individuals or groups of individuals who have expressed, shown or demonstrated an interest in the sewer maintenance management program. Interested parties can include, but are not limited to, regulators, local media, neighbors, local communities, farmers and others who have relevant input.

Internal Audit – a systematic internal investigation process for objectively evaluating the conformance to the requirements of the SMEMS and identifying deficiencies to be corrected or resolved.

Intranet - the CORPUD shared drive.

NCDENR – North Carolina Department of Environment and Natural Resources.

ISO 14001:2004 American National Standards – ISO’s EMS blueprint; a guidance document designed to assist in the development and implementation of a management system that meets the requirements set forth in the *ISO 14001 standards (EMS Elements)*.

Noncompliances – a deviation from federal, state and local laws, regulations and other compliance requirements applicable to sewer maintenance activities.

Nonconformances - a deviation from wastewater management policy, EMS procedures/requirements of the EMS Elements, ISO 14001:2004 American National Standards. They include circumstances that can create a noncompliance situation or significant environmental impacts.

O&M Manuals – operation and maintenance manuals.

Objectives – measureable improvements to established goals.

Operational Controls – include associated DOPs/DOIs, O&M manuals, maintenance procedures, contracts and employee skills that are required to effectively manage PCPs and meet legal and other requirements; including conformance with policy requirements and achievement of objectives and targets.

Other Requirements – other binding sewer maintenance management practices and requirements to which the Sewer Maintenance Division follows as part of the sewer maintenance management system. Examples include binding agreements with customers, suppliers, public organizations and commitments to going beyond compliance.

PCP – Process Control Point: the points in the processes where legal compliance and requirements, public acceptance and environmental impacts can be controlled.

Service Agreements – the contract between the City (Sewer Maintenance) and other person(s) to perform specific activities and services.

SMART Criteria – specific, measurable, achievable, relevant, time-bound; criteria that is used to define and evaluate the suitability of a goal or objective/target.

SMEMS Senior Management Team – includes Assistant Director for Wastewater, Sewer Maintenance Superintendent Assistant Water/Sewer Superintendents, EMS Coordinator and the EMR.

SMEMS Team – includes Assistant Director for Wastewater, Superintendent, Assistant Water/Sewer Superintendents, program supervisors and managers for the Sewer Maintenance Division. Also includes the EMS Coordinator and EMR

Third party Verification Audit – a systematic, structured audit of the SMEMS; performed by a qualified independent third party auditor using a standardized protocol for verification.

USEPA – United States Environmental Protection Agency.